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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,934	09/19/2003	Wei Liu	APPM/7989/ETCH/SILICON/JB	6821

7590 10/06/2004  
PATENT COUNSEL  
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EXAMINER	
KEBEDE, BROOK	
ART UNIT	PAPER NUMBER
2823	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/665,934

Applicant(s)

LIU ET AL.

Examiner

Brook Kebede

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-16, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 4-16, 18 and 19 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/13/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. The preliminary amendment filed under 37 CFR 1.53(b) on August 6, 2004 is acknowledged and the amendment have been placed in the file.

### *Claim Objections*

2. Claim 3 is objected to because of the following informalities:

Claim 3 recites the limitation “The method of claim 1 wherein the hydrocarbon gas is either halogenated, **or a combination**” in lines 1-2. However, it is appear that there is some limitation is missing next to “combination” or otherwise the limitation contains fragmented sentence. Appropriate correction is required.

Applicants’ cooperation is requested in reviewing the claims structure to ensure proper claim construction and to correct any subsequently discovered instances of claim language noncompliance. See *Morton International Inc.*, 28USPQ2d 1190, 1195 (CAFC, 1993).

### *Allowable Subject Matter*

3. Claims 1, 2, 4-16, 18, and 19 are allowed over prior art of record.
4. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither anticipates nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination, in particular, prior art of record does not teach “supplying to the process chamber a process gas mixture comprising a hydrocarbon gas, an oxygen gas, and an inert gas; and disassociating the process gas mixture to etch the patterned photoresist layer,” as recited in claim 1.

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Claims 2, 4-16, 18, and 19 are also allowed as being dependent of the allowed independent base claim.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Okoroanyanwu et al. (US/2002/0160628), Ramachandramurthy et al. (US/2003/0092281), Bell et al. (US/6,606,738), and Laaksonen et al. (US/6,762,130) also disclose trimming of the patterned resist layer. However, the prior art fails to teach "supplying to the process chamber a process gas mixture comprising a hydrocarbon gas, an oxygen gas, and an inert gas; and disassociating the process gas mixture to etch the patterned photoresist layer" either taken alone or in combination.

6. This application is in condition for allowance except for the following formal matters:

The instant application's claim language non-complacence as set forth in Paragraph 2 must be corrected prior to pass the application to issue.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

### ***Correspondence***


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BK  
September 30, 2004



George Fourson  
Primary Examiner